

# FACILITY STATUS CHANGE FORM

1219864

<b>Date Submitted:</b> Feb 21, 2013 <b>Originator:</b> David Warren <b>Phone:</b> 539-6040	<b>Area:</b> 100-N <b>Facility ID:</b> 105-NA and 1722-N <b>Action Memorandum:</b> 100-N Ancillary Facilities	<b>Control #:</b> D4-100N-0048
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**This form documents agreement among the parties listed below on the status of the facility D&D operations and the disposition of underlying soil in accordance with the applicable regulatory decision documents.**

### Section 1: Facility Status

- All D4 operations required by action memo complete.
- D4 operations required by action memo partially complete, remaining operations deferred.

#### **Description of Completed Activities and Current Conditions:**

Deactivation: Utility isolation was performed at the facility prior to beginning deactivation.

Decontamination and Decommissioning: If present, the following hazardous materials were removed prior to facility demolition: batteries, light bulbs, oils, grease, asbestos-containing material, mercury, refrigerant, and polychlorinated biphenyls. Hazardous material removal and waste disposition was performed in accordance with the *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70, and the *Removal Action Work Plan for 105-N/109-N Buildings Interim Safe Storage and Related Facilities*, DOE/RL-2005-43 .

Demolition: Demolition of the 105-NA Emergency Diesel Enclosure and the 1722-N Decontamination Building was completed by August of 2010. Demolition debris was loaded into roll-off containers and transported to the Environmental Restoration Disposal Facility (ERDF) where it was disposed.

#### **Description of Deferral (as applicable):**

N/A

### Section 2: Underlying Soil Status

- No waste site(s) present. No additional actions anticipated.
- Documented waste site(s) present. Cleanup and closeout to be addressed under Record of Decision.
- Potential waste site discovered during D4 operations. Waste site identification number <to be> assigned. Cleanup and closeout to be addressed under Record of Decision.

#### **Description of Current/As-Left Conditions:**

The 105-NA Emergency Diesel Enclosure and the 1722-N Decontamination Building have been demolished, excavated, and disposed at the ERDF. The excavation boundary has been documented in a post-demolition Global Positioning System (GPS) survey. No anomaly was encountered during demolition. All pertinent GPS survey maps are included in Attachment 4.

#### **Identification of Documented Waste Site(s) or Nature of Potential Waste Site Discovery (as applicable):**

Both the 105-NA Emergency Diesel Enclosure and the 1722-N Decontamination Building were connected to the 105-N Reactor building, and their footprints will be considered as part of WDS site 100-N-66, which addresses the reactor footprint.

The usage of a Sampling Determination Form is part of a process implemented by the *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70, Revision 3. The Sampling Determination Form for the 105-NA

100-NR-1

## FACILITY STATUS CHANGE FORM

Emergency Diesel Enclosure and the 1722-N Decontamination Building (SDF-100N-025) represents a regulatory agreement between DOE and the Lead Regulator (Ecology), and indicates that the requirements of the Action Memorandum have been met with respect to demonstrating that cleanup criteria, MTCA Method B for Chemical Constituents and 15 mRem above Hanford Site background for Radiological Constituents, have been achieved for soils and structures remaining after facility removal. The footprints of the 105-NA and 1722-N will be addressed as part of WDS site 100-N-66. No further action will be required by the D4 organization to demonstrate that cleanup criteria have been met for the 105-NA and 1722-N buildings.

### Section 3: List of Attachments

1. Facility Information
2. Photographs
3. GPS Surveys
4. Sampling Determination Form for the 105-NA Emergency Diesel Enclosure and the 1722-N Decontamination Building (SDF-100N-025)

DOE-RL

Date

Lead Regulator

EPA

Ecology

Date

#### DISTRIBUTION:

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Ecology: Rick Bond, H0-57

DOE: Rudy Guercia, A3-04

Document Control, H0-30

Administrative Record, H6-08 (100-NR-1 OU)

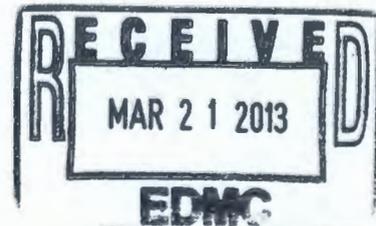
SIS Coordinator: Benjamin Cowin, H4-22

D4 EPL: David Warren, X9-08

Sample Design/Cleanup Verification: Theresa Howell, H4-22

FR Engineering: Rich Carlson, N3-30

FR EPL: Dan Saueressig, N3-30



D4 Project Facility Completion Form

**Attachment 1: Facility Information (6 pages)**

# D4 Project Facility Completion Form

## Facility Information

### Introduction

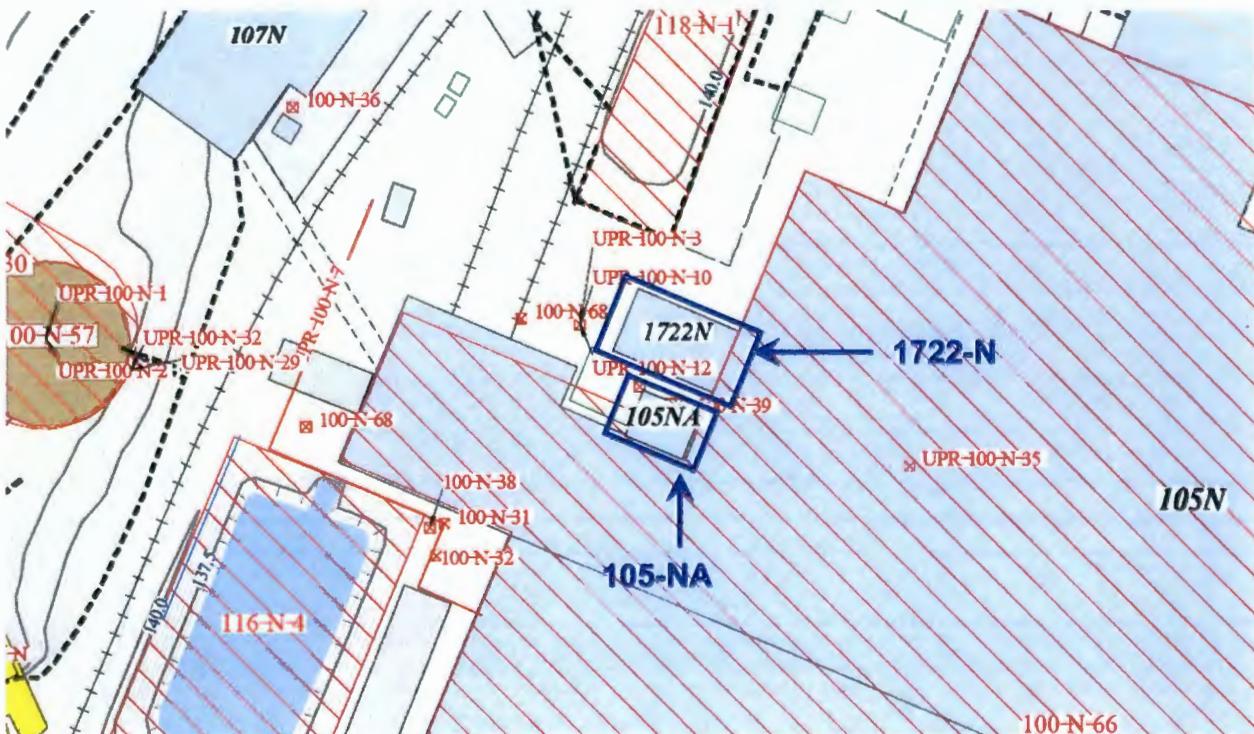
This document provides information regarding the history, characterization, and final status at the completion of deactivation, decontamination, decommissioning, and demolition activities of the 105-NA Emergency Diesel Enclosure and the 1722-N Decontamination Building, both formerly located at the 100-N Area.

### Site Information

The 105-NA Emergency Diesel Enclosure was a pre-engineered, metal-framed building that measured 192 square-feet in area. It had a roof and a western wall that were made of sheet metal, and a northern wall that was made of sheet metal and wire mesh. Its eastern and southern walls were connected to the adjacent exterior walls of the 105-N Reactor building. The building housed an emergency lift station diesel pump, which provided pumping capacity for Zone-1 to be used in response to any emergency high water level caused by a pipe break or a fog-spray-system activation. An underground storage tank located northwest of the building supplied diesel fuel to the pump.

The 1722-N Decontamination Building was a pre-engineered, metal-framed building that measured 40 feet by 25 feet in area. Its roof and northern, western, and southern walls were made of sheet metal. The building sat on top of a concrete slab and was attached to the adjacent wall of the 105-N Reactor building. It was used for various purposes throughout its existence, including an airlock, a loading dock, and a decontamination area for tools and equipment. A map of the 105-NA and 1722-N buildings is included in Figure 1. Photographs are included in Attachment 2.

**Figure 1: Location of the 105-NA and 1722-N Buildings**



105-NA Emergency Diesel Enclosure & 1722-N Decontamination Building Completion

## D4 Project Facility Completion Form

### Surveys and Samples

Table 1 summarizes the industrial hygiene and radiological control surveys performed at the 105-NA and 1722-N buildings. Table 2 summarizes the asbestos characterization samples taken from both buildings.

**Table 1: Summary of Surveys for 105-NA & 1722-N**

Type	Quantity	Method Detection Limits	Results
Radiological Scoping Surveys	3 Surveys	Beta-gamma: 1,000 removable/ 5,000 fixed <sup>a</sup>  Alpha: 20 removable/ 500 fixed <sup>a</sup>	Two scoping surveys were performed for the 105-NA building. No radiological contamination was detected during these surveys.  One scoping survey was performed for the 1722-N building. Radiological contamination was detected on the floor of the building and on equipment within the building.
Pre-Demolition and In-Process Radiological Surveys	Undetermined	N/A	Pre-demolition and in-process radiological surveys were not reviewed for the 105-NA building or the 1722-N building because both were maintained under radiological control during their existence. Accordingly, it can be reasonably assumed that both buildings contained radiological material.
Post-Demolition Radiological Surveys	0 Surveys	N/A	No down-posting radiological survey was performed at either the 105-NA building or the 1722-N building. Additionally, no Global Positioning Environmental Radiological Surveyor (GPERS) survey was performed for the final, post-demolition/post-excavation, footprints of these buildings.
Industrial Hygiene Scoping and In-Process Surveys	4 Surveys	N/A	The 105-NA and 1722-N buildings were determined to be free of beryllium contamination and any unique industrial hygiene hazard.

<sup>a</sup> – dpm/100 cm<sup>2</sup>

**Table 2: Summary of Asbestos Characterization Samples for 105-NA & 1722-N**

Sample #	Sample Date	Logbook Reference	Material Description	Location
J135K5	8-21-06	EL-1516-10, p. 82	Fibrous ceiling insulation covered in paint	1722-N: Interior face of ceiling
J135K6	8-21-06	EL-1516-10, p. 82	Drywall and tape	105-NA: Interior wall face

## D4 Project Facility Completion Form

### Demolition

The 105-NA and 1722-N buildings were demolished in August of 2010. The underground storage tank that supplied diesel fuel to the 105-NA pump was removed in December of 1990.

### Contaminants of Concern

Radionuclides were the only contaminants of concern for demolition of the 105-NA and 1722-N buildings.

### Civil Survey Information

Pre-demolition Global Positioning System (GPS) surveys were performed at the 105-NA building and the 1722-N building in March of 2006 and August of 2006, respectively. A post-demolition GPS survey was performed at the excavation footprint of both buildings. Copies of these GPS surveys are provided in Attachment 3.

### Anomalies

No anomaly was encountered during demolition of the 105-NA building or the 1722-N building.

### Status of Associated/Adjacent WIDS Sites

Table 3 provides information on the Waste Information Data System (WIDS) sites and subsites that were associated with, and/or adjacent to, the 105-NA and 1722-N buildings.

**Table 3: Associated/Adjacent WIDS Sites/Subsites for 105-NA & 1722-N**

Site Number	Site Name	Description & Classification/Reclassification Statuses	Removal Status
100-N-61:3 (subsite)	100-N Water Treatment and Storage Facilities Pipelines West of 109-N	This subsite consists of pipelines that were used to transport emergency raw water and overflow water on the west side of the 105-N Reactor Building and the 109-N Heat Exchanger Building.  <u>Classification:</u> Accepted	This subsite was not affected during removal of the 105-NA building or the 1722-N building.
100-N-63:2 (subsite)	Pipelines Between 109N, 105N, 107N, 1310N, 1322N, 1926N; and 36" Process Drain to Outfall	This subsite consists of the treatment, storage, and disposal (TSD) pipelines that transported reactor cooling water, radioactive liquid waste, and chemical liquid waste from the 105-N Reactor facilities to the 116-N-1 Crib and the 100-N-77 effluent pipeline; and the 36 inch process drain that emptied into the 100-N-77 effluent pipeline.  <u>Classification:</u> Accepted	A portion of this subsite was removed during removal of the 105-NA building and the 1722-N building.

### D4 Project Facility Completion Form

100-N-64:3 (subsite)	105-N/109-N Reactor Cooling Water Pipelines West of 109-N	This subsite consists of pipelines used for transporting vent, flush, blow-down, filtered, fire line, and demineralized water between the 109-N Heat Exchanger Building and the 107-N, 1300-N, 1303-N, and 1304-N facilities.  <u>Classification:</u> Accepted	This subsite was not affected during removal of the 105-NA building or the 1722-N building.
100-N-66	105-N/109-N Reactor Building Complex	This site consists of the 105-N Reactor Building and the 109-N Heat Exchanger Building.  <u>Classification:</u> Accepted	A portion of this site was removed during removal of the 105-NA building and the 1722-N building.
100-N-68	N Basin Low Level Radioactive Water Spill	This site consists of concrete and gravel surfaces outside of the 100-N Fuel Storage Basin that received an unplanned release of approximately 2,000 gallons of radioactively-contaminated water from the Fuel Storage Basin.  <u>Classification:</u> Accepted	This site was not affected during removal of the 105-NA building or the 1722-N building.
100-N-84:2 (subsite)	100-N Area Fuel and Foam Pipelines	This subsite consists of pipelines used for transporting fuel oil and fire-suppression foam.  <u>Classification:</u> Accepted	A portion of this subsite was removed during removal of the 105-NA building and the 1722-N building.
100-N-84:3 (subsite)	100-N Area Filtered and Potable Water Pipelines	This subsite consists of pipelines used for transporting makeup water, filter water, demineralized water, and potable water.  <u>Classification:</u> Accepted <u>Reclassification:</u> No Action	This subsite was not affected during removal of the 105-NA building or the 1722-N building.
100-N-84:5 (subsite)	100-N Area Sanitary Pipelines	This subsite consists of pipelines used for transporting sanitary water, sewer water, storm drain water, and disposal field water.  <u>Classification:</u> Accepted	This subsite was not affected during removal of the 105-NA building or the 1722-N building.
100-N-84:6 (subsite)	100-N Area Chemical and Process Sewer Pipelines	This subsite consists of pipelines used for transporting chemical waste, radioactive drain waste, flush waste, sample waste, and chlorine.  <u>Classification:</u> Accepted	A portion of this subsite was removed during removal of the 105-NA building and the 1722-N building.
118-N-1	1303-N Spacer Silos	This site consists of the 1303-N Spacer Silos and the underlying soil.  <u>Classification:</u> Accepted	This site was not affected during removal of the 105-NA building or the 1722-N building.
UPR-100-N-3	Spacer Disposal System Transport Line Leak	This site consists of soil north of the 105-N Lift Station that received an unplanned release of radiologically-contaminated water from the dummy fuel spacer transfer line, which connected the 100-N Fuel Storage Basin to the dummy disposal pit.  <u>Classification:</u> Accepted	This site was not affected during removal of the 105-NA building or the 1722-N building.

### D4 Project Facility Completion Form

UPR-100-N-10	105-N Lift Station Gravity Drain Line Leak	<p>This site consists of soil north of the 105-N Lift Station that received an unplanned release of radiologically-contaminated water from the gravity drain line of the 105-N Lift Station.</p> <p><u>Classification:</u> Accepted</p>	This site was not affected during removal of the 105-NA building or the 1722-N building.
UPR-100-N-12	Spacer Transport Line Leak	<p>This site consists of soil north of the 105-N Lift Station that received an unplanned release of radiologically-contaminated water from the dummy fuel spacer transfer line, which connected the 100-N Fuel Storage Basin to the dummy disposal pit.</p> <p><u>Classification:</u> Accepted</p>	This site was not affected during removal of the 105-NA building or the 1722-N building.
UPR-100-N-35	105-N Fuel Storage Basin Drainage System Leak	<p>This site consisted of an interstitial space between the 105-NA Lift Station pipe tunnel and the 105-N Fuel Storage Basin that received an unplanned release of radiologically-contaminated water from an underground drain line.</p> <p><u>Classification:</u> Accepted</p>	This site was not affected during removal of the 105-NA building or the 1722-N building.
UPR-100-N-39	Corridor 22 Suspect Liquid Unplanned Release	<p>This site consisted of soil and concrete outside the Corridor 22 doorway, on the west side of the 105-N Reactor Building, that received an unplanned release of several hundreds of liters of radioactively-contaminated scrub water from the 105-NE Fission Products Trap.</p> <p><u>Classification:</u> Accepted</p>	This site was completely removed during removal of the 105-NA building and the 1722-N building.

#### **Final Building Status and Underlying Soil**

The 105-NA and 1722-N buildings were demolished in August of 2010. The debris resulting from both demolitions was loaded into roll-off containers and shipped to the Environmental Restoration Disposal Facility (ERDF), where it was disposed. No anomaly or stained patch of soil was encountered during demolition of these buildings. The underground storage tank that supplied diesel fuel to the 105-NA pump was removed in December of 1990.

All WIDS sites historically present within the footprints of the 105-NA building and the 1722-N building were either removed during demolition and below-grade excavation of these buildings, or during subsequent excavation performed for nearby facilities and WIDS sites. The extent of the excavation that removed the 105-NA building and the 1722-N building was documented with a post-demolition GPS survey, which is provided in Attachment 3.

## D4 Project Facility Completion Form

Following demolition and removal of the 105-NA and 1722-N buildings, considerable demolition and excavation activity for the 105-N Reactor building occurred within, and around, the footprints of the 105-NA and 1722-N buildings. This subsequent excavation is thought to have removed much, if not all, of the radiological contamination directly associated with the 105-NA and 1722-N buildings. However, due to the historical proximity of these two buildings to the 105-N Reactor building, there remains a potential for the soil beneath the footprints of the 105-NA and 1722-N buildings to be contaminated. Accordingly, and as the 105-N Reactor building footprint has been designated as WIDS site 100-N-66, the footprints of the 105-NA and 1722-N buildings will be considered as part of WIDS site 100-N-66. The footprint of WIDS site 100-N-66 encompasses the 105-N/109-N Reactor Interim Safe Storage.

The excavation on the west side of the 105-N Reactor building has not been backfilled. Pertinent photographs are included in Attachment 2.

D4 Project Facility Completion Form

**Attachment 2: Photographs (3 Pages)**

D4 Project Facility Completion Form



**105-NA & 1722-N Pre-Demolition**



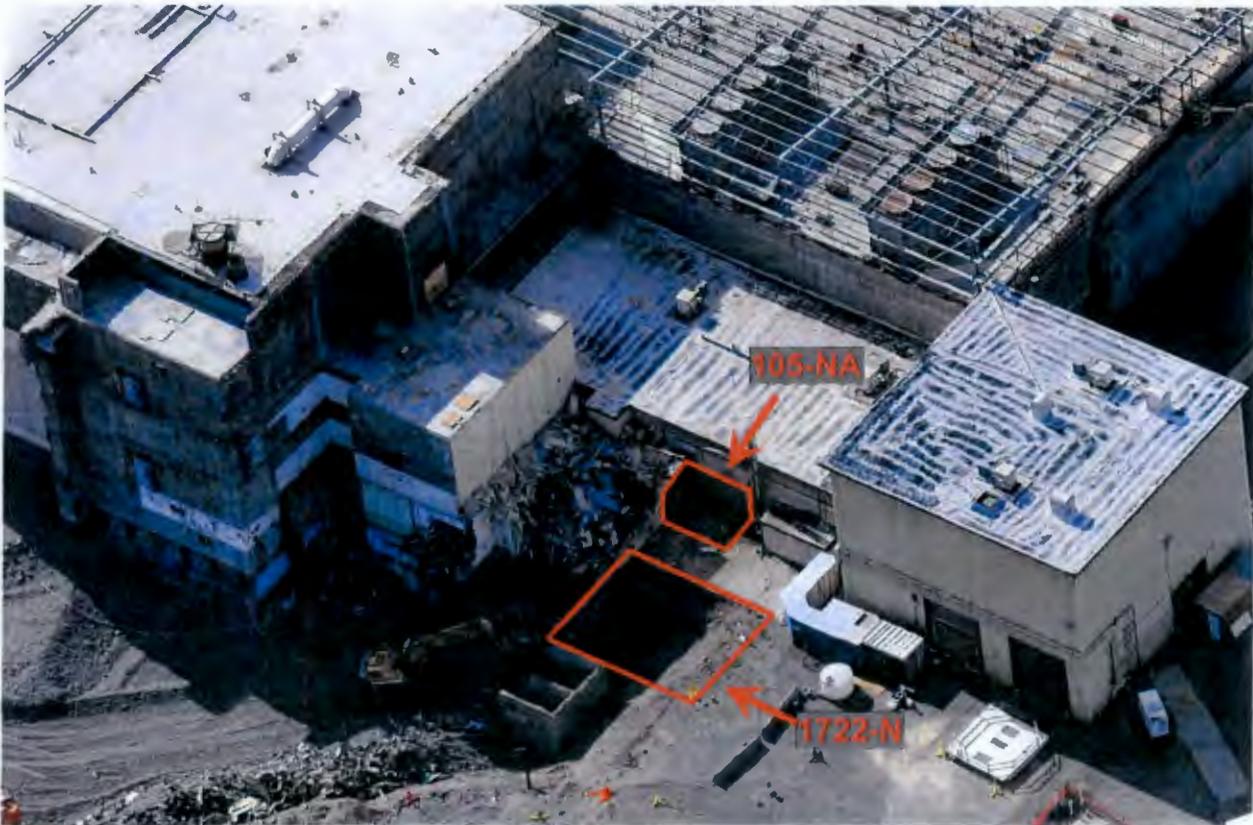
**105-NA Pre-Demolition**

105-NA Emergency Diesel Enclosure & 1722-N Decontamination Building Completion

D4 Project Facility Completion Form



**1722-N Pre-Demolition**



**105-NA & 1722-N Post-Demolition (August 2010)**

105-NA Emergency Diesel Enclosure & 1722-N Decontamination Building Completion

D4 Project Facility Completion Form



**105-NA & 1722-N Post-Demolition**



**West Side of 105-N/109-N Reactor Structures (December 2012)**

D4 Project Facility Completion Form

**Attachment 3: GPS Surveys (5 Pages)**

0579175

# GPS Survey Data Report for 105NE and 105NA Buildings Pre Demolition

**Project : Job 947**

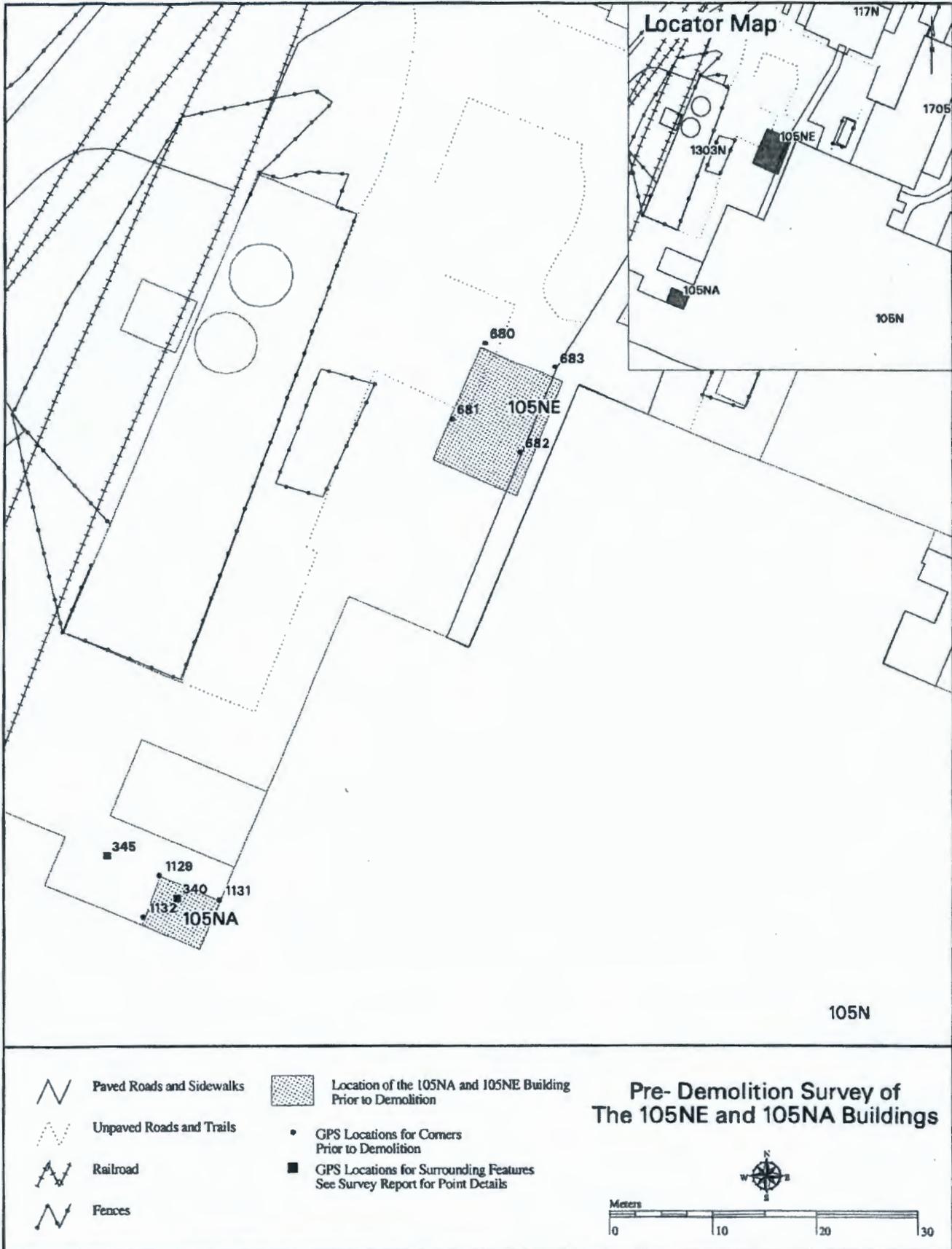
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<b>Coordinate System</b>	US State Plane 1983	<b>Zone</b>	Washington South 4602
<b>Project Datum</b>	NAD 1983 (Conus)		
<b>Vertical Datum</b>	NAD83	<b>Geoid Model</b>	GEOID99 (Conus)
<b>Coordinate Units</b>	Meters		
<b>Distance Units</b>	Meters		
<b>Height Units</b>	Meters		

Survey Project Name/Title: 105NE and 105NA Buildings  
 Survey Purpose: GPS the area corners and surrounding features for the 105N locations  
 Requested By: Amy Hood  
 General Site Location: 100-N  
 Charge Code:  
 Field Surveyor: Margo Aye  
 Computer Software Used: Trimble Survey Controller, and Geomatics Office V.11  
 Survey Equipment Used: 5800  
 Control Monuments Used: 100N-4  
 Survey Method: RTK  
 Estimated Horizontal Precision: .002m  
 Estimated Vertical Precision: .005m  
 Fieldwork Start Date: 3/22/06  
 Completion Date: 3/22/06  
 Notes: *LEPBOOK# EL1571*

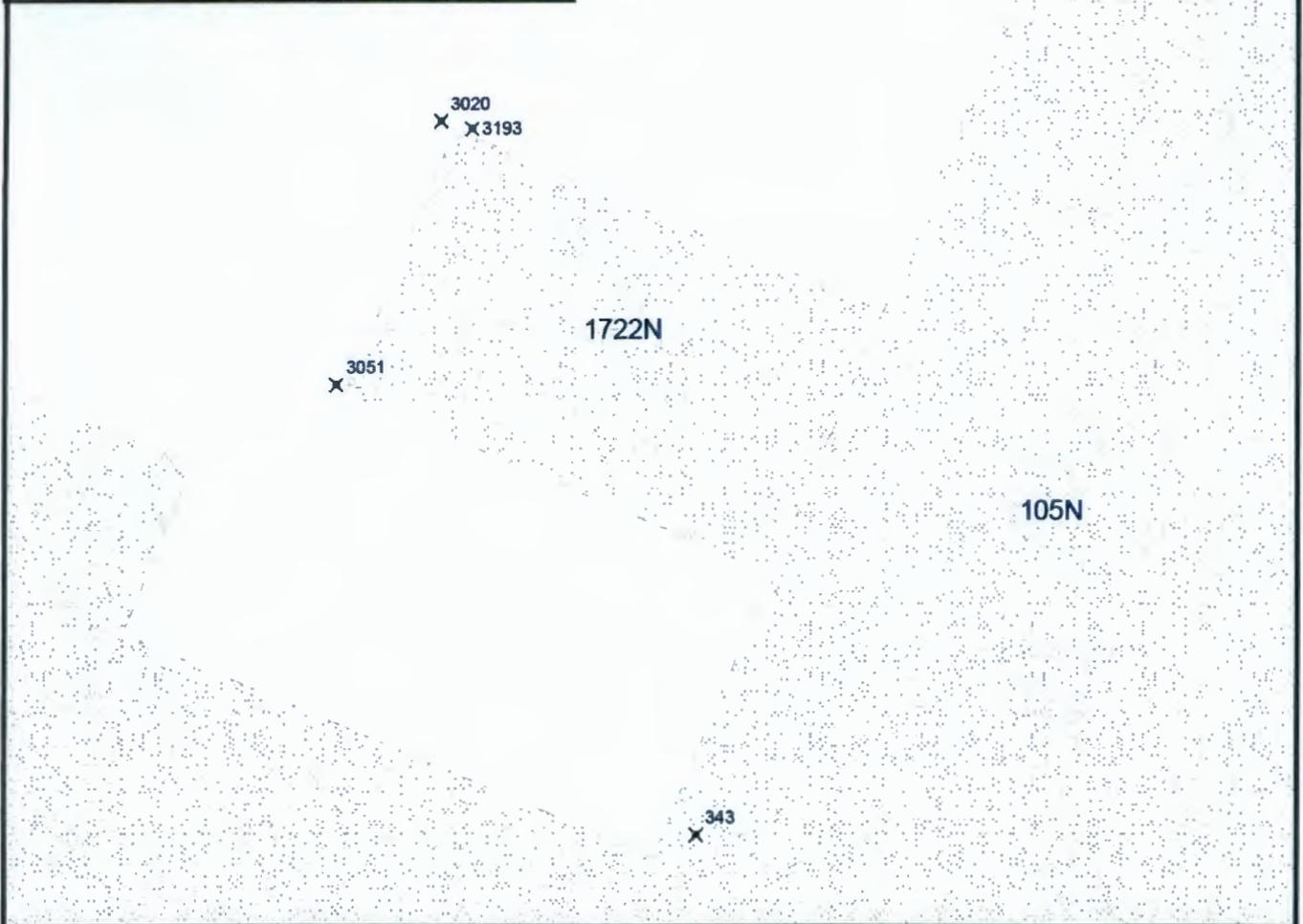
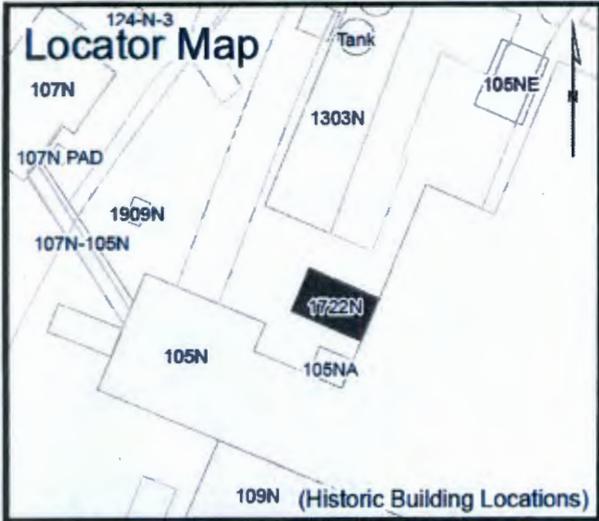
Name	Northing	Easting	Elevation	Feature Code	Description
680	149580.140m	571182.924m	139.610m	corn-bldg	
682	149569.547m	571186.306m	139.714m	corn-bldg	
681	149572.750m	571179.731m	139.637m	corn-bldg	
683	149577.762m	571189.691m	139.691m	corn-bldg	
1129	149528.942m	571151.584m	139.996m	corner	
340	149527.251m	571153.264m	142.778m	bldg-corn-top	
1131	149526.596m	571157.297m	139.996m	corner	
1132	149524.973m	571150.020m	139.996m	corner	
345	149530.845m	571146.525m	142.443m	bldg-corn-top	

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# D4 Project Facility Completion Form



D4 Project Facility Completion Form



x GPS Point Locations  Building Locations Pre-Demo

Name	Feat_Code	Desc_	Northing	Easting	Elevation	Building
3193	cap		149541.98	571150.36	139.768	1722N
343	bldg-corner-top	not at groun	149522.48	571156.64	143.584	105N
3020	bldg-corner-top	not at groun	149542.17	571149.47	139.786	1722N
3051	bldg-corner-top	not at groun	149534.90	571146.56	139.794	1722N
365	comer-bldg		149555.47	571169.95	139.759	105N

Pre Demolition Survey  
For 1722N Building



US State Plane 1983 Zone : Washington South 4602; NAD83, NAVD88  
Method: RTK; Accuracy .3m



WCH:03/23/11:V:\maaye\ArcMap\100N\1722n-predemo.mxd, 4:18:21 PM

D4 Project Facility Completion Form

# GPS Post Demo Survey Report for 1722N and 105NA Buildings

**Project : 105N-NW\_combined**

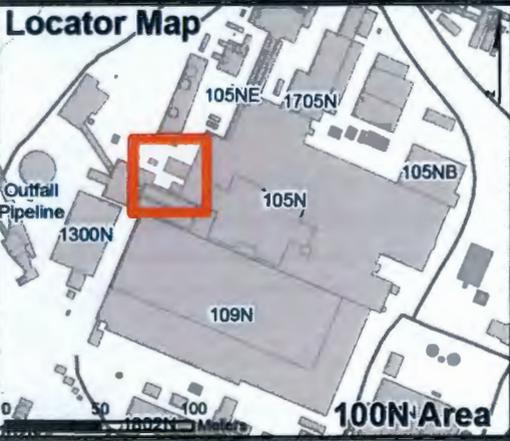
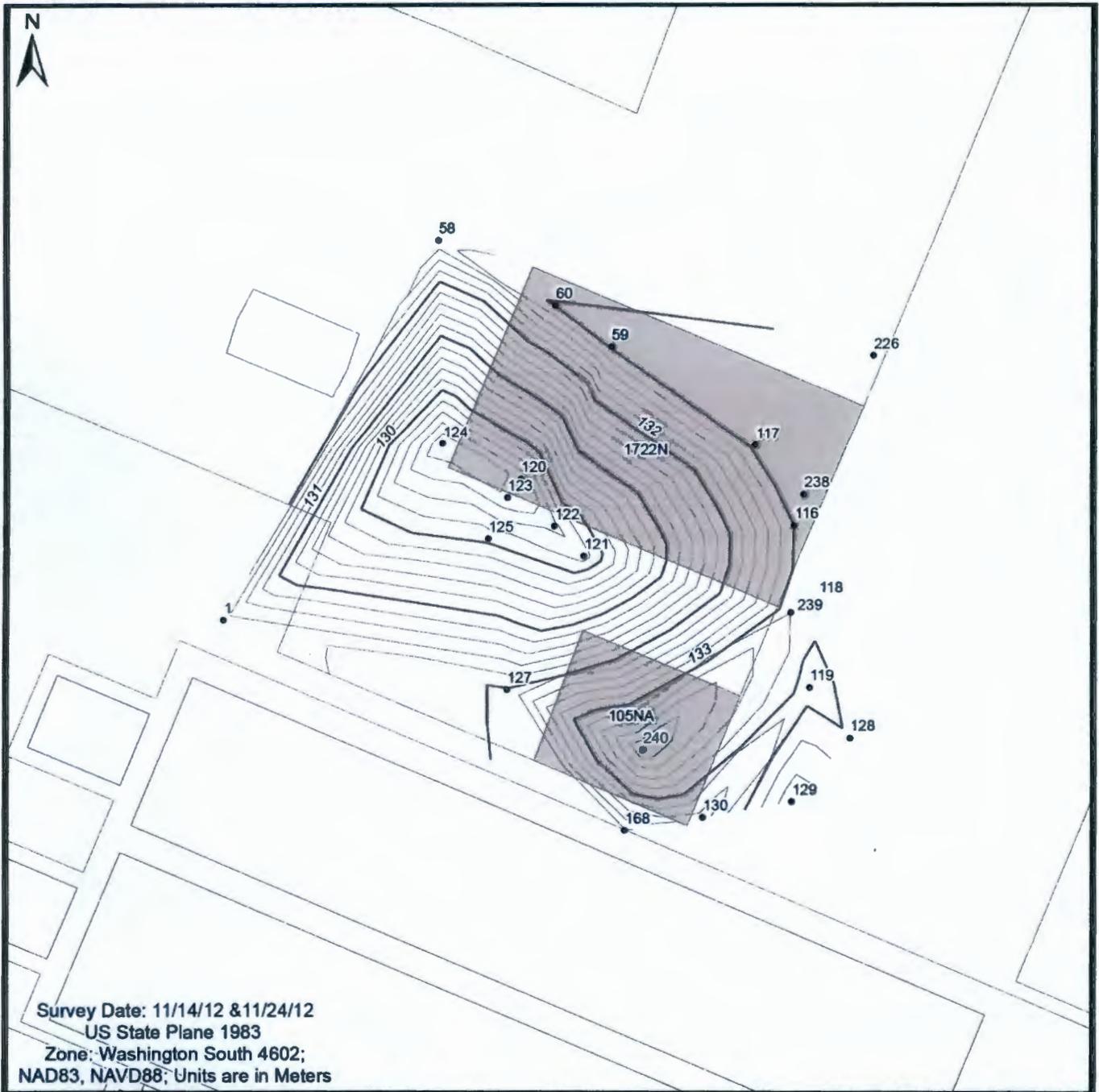
<b>User name</b>	maaye	<b>Date &amp; Time</b>	9:55:28 AM 2/19/2013
<b>Coordinate System</b>	US State Plane 1983	<b>Zone</b>	Washington South 4602
<b>Project Datum</b>	NAD 1983 (Conus)		
<b>Vertical Datum</b>	NAVD88	<b>Geoid Model</b>	GEOID99 (Conus)
<b>Coordinate Units</b>	Meters		
<b>Distance Units</b>	Meters		
<b>Height Units</b>	Meters		

Survey Project Name: Combination of two post demo surveys for 105N  
 Date: 1/2/2013  
 Equipment: 5800  
 Survey Purpose: Map post demolition excavation on the west side of 105N  
 Requested By: Clay McCurley  
 Location: 100N  
 Charge Code:  
 Field Surveyor: Margo Aye  
 Survey Software Used: Trimble Survey Controller, and Geomatics Office V.11  
 Survey Equipment Used: 5800  
 Control Monuments Used: N-2  
 Survey Method: RTK  
 Horizontal Precision: .020m  
 Vertical Precision: .050m  
 Fieldwork Start Date: 11/14/12  
 Fieldwork Completion Date: 11/24/12  
 Notes: These points were a combination of two surveys, which is why the point names are out of order.

Name	Northing	Easting	Elevation	Feature Code	Description:
1	149529.219m	571138.650m	131.669m	cp	
58	149542.958m	571146.437m	132.760m	top	
59	149539.106m	571152.716m	133.044m	top	
60	149540.598m	571150.692m	133.021m	top	
116	149532.612m	571159.366m	133.012m	top	
117	149535.508m	571157.949m	133.087m	top	
118	149529.949m	571160.262m	133.097m	top	
119	149526.798m	571159.922m	132.891m	top	
120	149534.280m	571149.430m	129.233m	toe	
121	149531.501m	571151.728m	129.709m	toe	
122	149532.583m	571150.651m	129.540m	toe	
123	149533.604m	571148.942m	129.224m	toe	
124	149535.557m	571146.599m	129.009m	toe	
125	149532.133m	571148.251m	129.936m	toe	
127	149526.699m	571148.921m	132.025m	top	
128	149525.002m	571161.378m	133.025m	top	
129	149522.691m	571159.271m	133.560m	top	
130	149522.135m	571156.033m	132.508m	top	
168	149521.657m	571153.199m	132.166m	cnt-wall	
226	149538.776m	571162.227m	133.072m	toe	
238	149533.727m	571159.715m	133.092m	toe	
239	149529.477m	571159.229m	133.196m	toe	
240	149524.561m	571153.863m	133.995m	corner	

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D4 Project Facility Completion Form



**GPS Post Demo Survey Report For 105NA & 1722N Building**

- GPS Point Locations (See Survey Report for Point Details)
- Major Contour 1 Meter Interval
- Minor Contour .2 Meter Interval
- 105NA and 1722N Building Location (Pre-Demo)
- Historic Building Locations



WCH: \\Hgis01\gis\home\maaye\ArcMap\100N\postdemo-105NA-1722N.mxd Date: 2/19/2013

D4 Project Facility Completion Form

**Attachment 4: Sampling Determination Form for the 105-NA Emergency Diesel  
Enclosure and the 1722-N Decontamination Building (SDF-100N-025)  
(8 Pages)**

D4 Project Facility Completion Form

Acrobat 9.0

**100-N ANCILLARY FACILITIES REMOVAL ACTION  
SAMPLING DETERMINATION FORM**

Determination Number  
SDF-100N-025

**A. INSTRUCTIONS**

*This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.*

**B. GENERAL INFORMATION**

Building Name: Emergency Diesel Building & Decontamination- Hot Shop Building Building Number: 105-NA & 1722-N

WDS Sites Associated or Adjacent:  
Associated: 100-N-63:2, 100-N-66, 100-N-84 (colon sites 2 & 6)

Adjacent: 100-N-61:3, 100-N-64, 100-N-64:3, 100-N-84:3, UPR-100-N-3, UPR-100-N-10, UPR-100-N-12, UPR-100-N-35, UPR-100-N-39

-All Above WDS Sites Have Been Classified As Accepted-

**Other:**

105-NA: This facility was made of sheet metal and wire mesh and contained an emergency lift station diesel pump (CCN 157852 pg. 1, BHI-00221 pg. 3-50, and WCH-473 pg. 1). It shared two walls with the 105-N Reactor Building (CCN 157852 pg. 1, BHI-00221 pg. 3-50, and WCH-473 pg. 1). This facility was demolished in August 2010 and demolition debris were disposed at the Environmental Restoration Disposal Facility (ERDF) (CCN 157852 pg. 1 & WCH-473 pg. 1).

1722-N: This facility was made of sheet metal positioned atop a concrete slab foundation (CCN 157865 pg. 1, BHI-00221 pg. 3-108, and WCH-473 pg. 10). It shared a wall with the 105-N Reactor building and was used both as a decontamination area for tools and equipment used to maintain the radioactively contaminated 105-N Reactor and Fuel Storage Basin, and as an airlock and loading dock for the 105-N Reactor decontamination station and adjacent areas (CCN 157865 pg. 1, BHI-00221 pg. 3-108, IHC-2005-0032, and WCH-473 pg. 10). This facility was demolished in August 2010 and demolition debris were disposed at the ERDF (CCN 157865 pg. 2 & WCH-473 pg. 10).

**C. INFORMATION SOURCES**

Available information (list document number for each if applicable):

Historical Site Assessment: N/A

Site Walkdown: N/A

IH Characterization Report: N/A

Radiological Survey:

- RSR-100ISS-06-0076
- RSR-100ISS-08-0528 / 0748 / 0758 / 0877
- RSR-100ISS-10-0639
- RSR-100N-07-0629 / 0758 / 0963
- RSR-100N-08-0279 / 0380 / 0382 / 0556 / 0603 / 0860 / 1381 / 1506
- RSR-100N-10-1430
- RSR-100SMT-02-0329
- RSR-100SMT-06-0146 / 0174

IHC/FHC Document: Initial Hazard Categorization (IHC) Documentation Form for D4 of Buildings 105NB, 1722N and 1605NE: IHC-2005-0032

- WIDS/SIS:
- RCC Stewardship Information System (SIS) Facility Summary Reports for 105-NA, 1722-N, and UPR-100-N-39
  - Waste Information Data System (WIDS) General Summary Reports for UPR-100-N-39

- Post-Demolition Summary Report for 105-NA Emergency Diesel Enclosure: CCN 157852

PDSR: • Post-Demolition Summary Report for 1722-N Decontamination-Hot Shop Building: CCN 157865

Facility Inspection: N/A

Waste Characterization Checklist: N/A

Summary Report: N/A

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Other:

- 100 Area D4 Project Building Completion Report, Rev. 0: WCH-473
- 100-N Ancillary Facilities Preliminary Hazard Classification: CCN 095435
- 100-N Area Underground Storage Tank Closures, Rev. 0: WHC-SD-EN-TI-136
- Information and Notifications for Underground Storage Tanks (USTs) at the Hanford Site: 91-ERB-129
- "Pre-Existing" Conditions Survey of Hanford Site Facilities Phase II, Rev. 0: BHI-00221
- WCH Industrial Hygiene Beryllium Wipe Sampling: CCN 0576105
- Work Package for Hazardous Material Removal from 105-NA and 1722-N, Rev. 0: ISS-07-06-27-001
- Work Package for Hazardous Material Removal from 105-NA and 1722-N, Rev. 0: ISS-07-06-27-001 A
- Work Package for Hazardous Material Removal from 105-NA and 1722-N, Rev. 0: ISS-07-06-27-001 B
- Work Package for Hazardous Material Removal from 105-NA and 1722-N, Rev. 0: ISS-07-06-27-001 E
- Work Package for Hazardous Material Removal from 105-NA and 1722-N, Rev. 0: ISS-07-06-27-001 F
- Work Package for Hazardous Material Removal from 105-NA and 1722-N, Rev. 0: ISS-07-06-27-001 G
- Pre-Demolition Facility Photographs, Time-Stamped: SIS Facility Summary Report for 105-NA pg. 4 (6/20/2006), SIS Facility Summary Report for 1722-N pg. 5 (1/31/2007), CCN 157582 pg. 5 (1/25/2007), and CCN 157865 pg. 5 (1/25/2007)
- Pre-Demolition Facility Photographs, No Time Stamp: SIS Facility Summary Report for 105-NA pgs. 3, 5, 6, and 7; SIS Facility Summary Report for 1722-N pgs. 3, 4, 6, 7, and 8; and SIS Facility Summary Report for UPR-100-N-39 pg. 3
- Post-Demolition Facility Photographs, No Time Stamp: CCN 157582 pg. 6 & CCN 157865 pg. 6

**D. HAZARDOUS SUBSTANCES**

Check all that apply:

None     Asbestos containing material     Lead     PCBs/PCB Articles     Oils/Greases

Chemicals    List: N/A

Radiological Contamination     Mercury/Mercury Devices

Other: Several unlabeled containers were present at the 105-NA facility (BHI-00221 pg. 3-50).

References/Comments:

- Oils/Greases: A carbon steel single-shell UST (105-N-LFT), used to store diesel fuel, was associated with the 105-NA facility (CCN 157582 pg. 2, CCN 157865 pg. 2, SIS Facility Summary Report for 105-NA pg. 1, and WHC-SD-EN-TI-136 pgs. 1 & 7). The 105-NA facility contained bottled oil and a diesel pump (CCN 157852 pg. 1, BHI-00221 pg. 3-50, and WCH-473 pg. 1).
- Radiological Contamination: Radiological contamination was detected at the 105-NA facility, the 1722-N facility, on the exterior of the diesel fuel UST, and in the soil surrounding the diesel fuel UST (RSR-100SMT-06-0146, BHI-00221 pgs. 3-50 & 3-108, WHC-SD-EN-TI-136 pg. 3, and 91-ERB-129 pg. 2). The vicinity of the 105-NA facility was considered "radiological" (CCN 095435 Appendix A pg. 1). The 1722-N facility was used as a decontamination area for radiologically contaminated equipment from the 105-N Reactor and Fuel Storage Basin (CCN 157865 pg. 1, BHI-00221 pg. 3-108, IHC-2005-0032, and WCH-473 pg. 10).

There was potential for the presence of standard industrial hazardous substances such as lead, beryllium, cadmium, PCBs, and asbestos within the 1722-N facility (IHC-2005-0032 pg. 3).

Liquids:  Yes     No

If yes, describe source and nature of liquids:

A 5,000 gallon diesel fuel UST (removed 12/1990) was associated with the 105-NA facility (CCN 157582 pg. 2; CCN 157865 pg. 2; SIS Facility Summary Report for 105-NA pg. 1; WHC-SD-EN-TI-136 pgs. 1, 3, and 7; and 91-ERB-129 Attachments 2 & 4). Also, standing water was present on the floor of the 105-NA facility during an inspection (BHI-00221 pg. 3-50).

Were the hazardous substances removed from the facility prior to demolition?     Yes     No

As verified by what documentation:

All known hazardous substances were removed from these facilities prior to their demolition (WCH-473 pg. 15).

Any PCB light ballast, fluorescent light, sodium vapor light, process chemical, residual liquid chemical, door actuator, oil,

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mercury component, and free mercury cache contained within the 105-NA and 1722-N facilities would have been removed prior to demolition (ISS-07-06-27-001 Base Work Package and ISS-07-06-27-001 A-Packs A, B, E, F, and G). Reviewed documentation did not indicate the presence of lead, beryllium, cadmium, or asbestos at these facilities. The 1722-N facility was deactivated in the early 1990s and was documented to have remained empty at least through November of 2005 (IHC-2005-0032 pg. 1).

The diesel fuel UST was removed December 7, 1990 (CCN 157582 pg. 2, CCN 157865 pg. 2, SIS Facility Summary Report for 105-NA pg. 1, WHC-SD-EN-TI-136 pgs. 3, 7, and 8, and 91-ERB-129 pgs. 1 & 2 and Attachments 2 & 4). There was no indication that the contents of the UST had leaked into the surrounding soil (WHC-SD-EN-TI-136 pg. 8).

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition?  Yes  No  N/A

**References/Comments:**

The 105-NA and 1722-N facilities did not contain considerable amounts of chemical or radiological substances (CCN 095435 pg. 2-1 & Appendix A pgs. 1 & 7). Nevertheless, the 1722-N facility was used as a decontamination area for equipment from the 105-N Reactor and the Fuel Storage Basin, both of which were radiologically contaminated (CCN 157865 pg. 1, BHI-00221 pg. 3-108, IHC-2005-0032, and WCH-473 pg. 10). Accordingly, elevated levels of radiological contamination were discovered within the 105-NA facility and the 1722-N facility (RSR-100SMT-06-0146, and BHI-00221 pgs. 3-50 & 3-108). The risk of migration of radiological contamination during excavation was mitigated by isolation of any floor drains and sanitary sewers from these facilities prior to demolition (WCH-473 pg. 15).

Following its removal, the exterior of the diesel fuel UST was found to be radiologically contaminated (WHC-SD-EN-TI-136 pg. 3 & 91-ERB-129 pg. 2). Decontamination and subsequent disposal of the UST at the Hanford low level waste burial ground was planned as a result of the radiological contamination (91-ERB-129 pg. 2). The soil around the tank was sampled and radiological contamination was discovered in a sufficient level to prevent laboratory analysis before the expiration of the holding time (WHC-SD-EN-TI-136 pg. 3). A past unplanned release had displaced several hundred liters of radioactively contaminated water from the Fission Product Trap to a concrete pad and surrounding soil directly adjacent to the location of the UST (WIDS General Summary Report for UPR-100-N-39 pg. 1). It is possible that this unplanned release was the cause of the radiological contamination present on the tank exterior and in the surrounding soil.

Standing water was present on the floor of the 105-NA facility during an inspection (BHI-00221 pg. 3-50). If this water were to have migrated from the facility, it could have leached radiological contamination into the underlying or adjacent soil.

List any hazardous materials left in the building for demolition:  
N/A

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?  
A work progress radiological survey detected substantially elevated levels of removable radiological contamination within the 1722-N facility (RSR-100SMT-06-0146, conducted 3/30/2006). Twenty additional radiological surveys pertaining to the 105-NA and 1722-N facilities do not indicate the presence of radiological contamination (RSR-100ISS-06-0076, RSR-100ISS-08-0528 / 0748 / 0758 / 0877, RSR-100ISS-10-0639, RSR-100N-07-0629 / 0758 / 0963, RSR-100N-08-0279 / 0380 / 0382 / 0556 / 0603 / 0860 / 1381 / 1506, RSR-100N-10-1430, RSR-100SMT-02-0329, and RSR-100SMT-06-0146 / 0174).

As addressed above, historical documentation indicates that the 105-NA facility, the 1722-N facility, and the nearby diesel fuel UST were radiologically contaminated. The UST was removed in 1990 and the facilities were demolished in 2010 and demolition debris were disposed at the ERDF.

Comments:  
Pertinent design drawings include H-1-38995 & H-1-45007, Sheet 37.

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#### E. FIELD OBSERVATIONS

##### Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility?  Yes  No

References/Comments:

No anomalies were found at either the 105-NA or 1722-N facilities (CCN 157582 pg. 2 & CCN 157865 pg. 2). No reviewed documentation indicates the presence of stained soils in the area.

Were samples taken of the stained soils/anomalies?  Yes  No  N/A

References/Comments:

Do results of the samples indicate that chemical contamination exists?  Yes  No  N/A

References/Comments:

Is the area potentially a discovery site?  Yes  No

References/Comments:

##### Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination?  Yes  No

References/Comments:

N/A. Post demolition GPERS surveys of the areas underneath the 105-NA and 1722-N have not yet been conducted as the area is still being utilized to support ongoing work activities for removal of adjacent WIDS sites. It should be noted that the footprints of the 105-NA and 1722-N are to be included in the 100-N-66 Confirmatory Waste Site footprint which includes the 105-N/109-N Interim Safe Storage (ISS) Enclosure. Post demolition radiological area surveys, depicting the final radiological conditions of the 105-NA and 1722-N areas will be performed at a later date and will be included in the Facility Status Change Form for the 109-N/105-N as supporting information for as left conditions of the 100-N-66 Reactor WIDS footprint.

Were samples taken of the radiologically contaminated soils?  Yes  No  N/A

References/Comments:

Is the area potentially a discovery site?  Yes  No

References/Comments:

Were the contaminated materials removed?  Yes  No  N/A

References/Comments:

#### F. WIDS SITES

Were there any WIDS sites affected by D4 activities?  Yes  No

If yes, list the WIDS sites:

The excavation for removal of the 1722-N and 105-NB, as well as well as excavations for work-scope required to complete Interim Safe Storage of the 105-N reactor, effectively removed the UPR-100-N-39, parts of 100-N-66 (Reactor footprint WIDS) and portions of WIDS pipelines 100-N-84:2, :6, and 100-N-63:2. The excavation required for removal of these structures was left open and eventually became part of a larger excavation required for removal of the 105-N Fuel Storage Basin/Transfer Bay, 1303-N Spacer Silos, 107-N and associated pipe trenches, and the 105-NE Fission Products Trap. The accepted WIDS sites will be verification sampled by FR at a later date.

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Were the WIDS site(s) completely removed?  Yes  No

References/Comments:

It is likely that excavation for removal of the 105-NB, 1722-N, and other 105-N Reactor Interim Safer Storage work-scope completely removed UPR-100N-39. At that time various sections of WIDS pipelines were also partially removed, since that time the remaining sections of these pipelines have been removed during demolition/remediation of the 105-N Fuel Storage Basin/Transfer Bay, 1303-N Spacer Silos, 107-N and associated pipe trenches, and the 105-NE Fission Products Trap.

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site?  Yes  No

References/Comments:

As mentioned above, excavations for removal of the 1722-N and 105-NB, as well as additional demolition/removal work scope related to ISS of the 105-N reactor, effectively removed the 1722-N and 105-NB facilities as well as portions of WIDS sites co-located within their boundaries. The 105-NA has overlap with the 100-N-66 WIDS site, and the 1722-N shared a common wall with the 105-N Reactor Building. Facilities sharing a common wall with the 105-N/109-N were generally included in the footprint of the 100-N-66 WIDS footprint. This was the case with half of the 105-NA but was not the case for the 1722-N. For this reason, it is requested that the 100-N-66 be expanded to include the entire footprint of the 105-NA and 1722-N. The 100-N-66 is a confirmatory waste site and will not be verification sampled or closed out at this time because the footprint of the site encompasses the 105-N/109-N Reactor ISS which will be addressed at a later date.

**G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION**

What are the potential contaminants of concern for the remaining below-grade soil?

None  SVOC  VOC  Metals  TPH  Rad  PCBs

Other (Specify): \_\_\_\_\_

Comments:

Elevated levels of radiological contamination were discovered within the 105-NA facility, the 1722-N facility, on the exterior of the diesel fuel UST, and in the soil surrounding the diesel fuel UST (RSR-100SMT-06-0146, BHI-00221 pgs. 3-50 & 3-108, WHC-SD-EN-TI-136 pg. 3, and 91-ERB-129 pg. 2).

The soil around the diesel fuel UST was sampled and radiological contamination was discovered in a sufficient level to prevent laboratory analysis before the expiration of the holding time (WHC-SD-EN-TI-136 pg. 3).

In 1983/1984, an unplanned release displaced several hundred liters of radioactively contaminated water from the Fission Product Trap to a concrete pad and surrounding soil directly adjacent to the location of the UST (WIDS General Summary Report for UPR-100-N-39 pg. 1).

The 105-NA facility was found to be holding standing water which could have leached radiological contamination into the underlying or adjacent soil (BHI-00221 pg. 3-50, December 1994).

Summary of in-process soil sampling requirements:

N/A

Constituents detected / concentrations / rationale

Consult Sample Collection Summary below

Sample Collection Summary

• Drywall and tape at the 105-NA facility: Sample (HEIS) Number J135K6 (CCN 157852 pg. 1)

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• Beryllium wipe sample at the 1722-N facility: Sample (HEIS) Number J110T1 (CCN 0576105 pg. 2)

Sample numbers and corresponding analysis results for the diesel fuel UST are provided in 100-N Area Underground Storage Tank Closures (WHC-SD-EN-TI-136 pgs. 3-7). The initial sampling below the tank (conducted 12/7/1990) yielded radiological levels from 20,000 - 50,000 counts per minutes, which prevented analysis before the holding times expired. The site was then backfilled. The site was re-excavated using plastic markers to identify the original excavation boundary, and eventually sampled on 3/30/1992. No indication of tank leakage or petroleum contamination was found and the analytical results were below action levels.

### H. NOTES / ADDITIONAL INFORMATION

Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):  
Figure 1: GIS Site Map for 105-NA and 1722-N

### I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?  Yes  No

Based on the above information it was determined that sampling:  will  will not be required in order to demonstrate that cleanup criteria have been met.

The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

Information Reviewer Signature <i>David Ware</i>	Printed Name David Warren	Date <sup>DJW</sup> 1.9.13
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The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature <i>[Signature]</i>	Printed Name Rudy Guercia	Date 1/9/13
Ecology Signature <i>[Signature]</i>	Printed Name Rick Bond	Date 1/16/13



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Map

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- Accepted,
  - Accepted, Closed Out
  - Accepted, Consolidated
  - Accepted, Interim Closed Out
  - Accepted, No Action
  - Accepted, Rejected
  - Discovery
  - Not Accepted,
- WasteSitesLine
- Sitecode Missing In SIS
  - Accepted,
  - Accepted, Closed Out
- Accepted,
  - Accepted, Closed Out
  - Accepted, Consolidated
  - Accepted, Deleted From NPL
  - Accepted, Interim Closed Out
  - Accepted, No Action
  - Accepted, Rejected
  - Discovery,
  - Not Accepted (Proposed),
  - Not Accepted,
- Waste Polygon Labels
- Buildings
- Unknown
  - Active
  - Demolished
  - Inactive
  - Removed
- Building Labels